



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/556,802	12/21/2006	Anco Heringa	GB03 0070 US1	6723
<div>24738 7590 01/15/2008</div> <div>PHILIPS ELECTRONICS NORTH AMERICA CORPORATION</div> <div>INTELLECTUAL PROPERTY & STANDARDS</div> <div>370 W. TRIMBLE ROAD MS 91/MG</div> <div>SAN JOSE, CA 95131</div>				
			EXAMINER	
			VALENTINE, JAMI M	
			ART UNIT	PAPER NUMBER
			2815	
			MAIL DATE	DELIVERY MODE
			01/15/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/556,802

Applicant(s)

HERINGA, ANCO

Examiner

Jami M. Valentine, Ph.D.

Art Unit

2815

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 7-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10/31/07 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Status of the Application

1. Acknowledgement is made of the amendment received 10/31/07. **Claims 1-5 and 7-18** are pending in this application. Claims 1, 5, 7, 8, 11 and 14 were amended, claim 6 was cancelled in the amendment received 10/31/07.

Response to Arguments

2. Applicant's arguments filed 10/31/07 have been fully considered but they are moot in view of the new ground(s) of rejection.

Inventorship

3. If Applicant believes that there is that there is a conflict between the declaration and the filing receipt, the examiner suggests that applicant's representatives formally request a corrected filing receipt as outlined in MPEP 201.03 [R-5].

Drawings

4. The drawings were received on 10/31/07. These drawings are acceptable.

Claim Objections

5. The objection to the claims has been withdrawn in light of the amendment received 10/31/07.

Claim Rejections - 35 USC § 112

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
7. Per Claim 1 and claim 9, the rejection under 35 U.S.C. 112, second paragraph has been withdrawn in light of the amendment received 10/31/07.

Claim Rejections - 35 USC § 102/103

8. **Claims 1-5 and 7-18** are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Omura et al. (US Patent Application Publication No 2002/0030237) hereinafter referred to as Omura.
9. Per **Claims 1, 11-13** Omura (e.g. figure 4) discloses a semiconductor device, including
- a semiconductor region having p (13) and n (12) semiconductor regions which form a pn junction (between (13) and (12) and
 - a field shaping region ((16) as shown in figure 4) located adjacent only one of the p and n semiconductor regions to increase the reverse breakdown voltage of the device,
 - wherein the field shaping region is insulating material [0058] and the field shaping region extends from a first capacitive voltage coupling region (17) to a second capacitive voltage coupling region (19) (e.g. figure 4),
10. See [0074-0076] which discloses that the capacitive voltage coupling region (19) comprises a conductive material region and [0097] discloses where the conductive material region is integral with a main (gate) electrode of the device. Figure 4 also shows the limitations of claim 13.

11. Additionally, Claim 1 recites the performance properties of the device (e.g. the operational properties when a voltage is applied.) These functional limitations do not distinguish the claimed device over the prior art, since it appears that these limitations can be performed by the prior art structure of Omura. While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. *In re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429,1431-32 (Fed. Cir. 1997) See MPEP 2114

12. Per **Claims 2-4** Omura (e.g. figure 6) discloses the device of claim 1, but fails to teach the use of the claimed materials for the field shaping region.

13. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the claimed materials as the material of the field shaping region, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for its intended use as a matter of design choice. *In re Leshin*, 125 USPQ 416.

14. Per **Claim 5** Omura (e.g. figure 4) discloses the device of claim 1, including where the insulating field shaping region (16) is adjacent the n semiconductor region.

15. Per **Claim 7** Omura (e.g. figure 4) discloses the device of claim 1, including where the insulating field shaping region (16) is adjacent only one side of the n semiconductor region.

16. Per **Claim 8** Omura (e.g. figure 4) discloses the device of claim 1, including where the insulating field shaping region (16) is adjacent both sides of the n semiconductor region.

17. Per **Claim 14** Omura (e.g. figure 4) discloses the device of claim 1, including where the device is a diode device. [0200]

18. Additionally, Claim 14 recites the intended use of the pn junction device. These functional limitations do not distinguish the claimed device over the prior art, since it appears that these limitations can be performed by the prior art structure of Omura. While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. In re Schreiber, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429,1431-32 (Fed. Cir. 1997) See MPEP 2114

19. **Claims 15 –18** recite the intended use of the device. These functional limitations do not distinguish the claimed device over the prior art, since it appears that these limitations can be performed by the prior art structure of Omura . While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. In re Schreiber, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429,1431-32 (Fed. Cir. 1997) See MPEP 2114

20. Further, it would have been obvious to use the pn junction device of claim 1 in any of the well known devices recited in claims 14-18 each of which utilizes pn junctions. All of the component parts are known in the prior art. The only difference is the combination of the old elements into a single device. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the pn junction device taught by Omura in the well known devices of claims 14-18 in order to achieve the predictable result of providing a pn junction in a device that requires a pn junction. Additionally, it would have been obvious to a person of ordinary skill in the art to try the pn junction device taught by Omura in an attempt to provide an improved semiconductor device, as a person with ordinary skill has good reason to

pursue the known options within his or her technical grasp. *KSR International Co. v. Teleflex Inc.*, 550 U.S.--, 82 USPQ2d 1385 (2007).

Allowable Subject Matter

21. Claims 9-10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

22. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jami M. Valentine, Ph.D. whose telephone number is (571) 272-

Application/Control Number:
10/556,802
Art Unit: 2815

Page 7

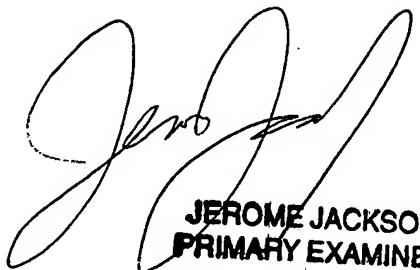
9786. The examiner can normally be reached on Mon-Thurs 9:00am-6pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Parker can be reached on (571) 272-2298. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jami M Valentine, Ph.D.
Examiner
Art Unit 2815

JMV



JEROME JACKSON
PRIMARY EXAMINER